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# NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

## FACT SHEET

(pursuant to NAC 445A.236)

**Permittee Name**: University of Nevada, Reno
Nevada Agricultural Experiment Station (NAES)
UNR ms/221
Reno, NV 89557-0107

**Permit Number**: NEV92012

**Location**: Nevada Agricultural Experiment Station (NAES)
(Main Station Field Lab)
5901 Clean Water Way
Reno, NV 89502 (Washoe County)
Latitude: 39° 30′ 46″ North
Longitude: 119° 44′ 30.5″ West
(Latitude/Longitude at Front Door – Wolf Pack Meats)
Township 19N; Range 20E; Sections 14, 15 & 22

**General**: The Permittee (NAES) operates an agricultural experiment station on a property of approximately 1,098 acres. At present approximately 800 acres are planted with forage and pasture crops such as alfalfa, pasture grasses, clover and triticale, and irrigated with reclaimed water from the Truckee Meadows Water Reclamation Facility (TMWRF, Permit #NV0020150). The Permittee has requested that an additional 200 acres be added to the total irrigated land. The Truckee River bounds the station on the north, McCarran Blvd. on the west, and Pembroke Drive on the south. The property terminates on the east at the TMWRF. The effluent from TMWRF is tertiary-treated (denitrified & disinfected). The Permittee has applied for an increase in effluent usage so that all 1000 acres can be irrigated with TMWRF effluent. The irrigation season is from April 15$^{th}$ through October 15$^{th}$ of each year. The Permittee proposes the irrigation flow be increased from 5.6 MGD to 10.0 MGD (30-day average) and a total annual application volume of 3,145 Acre-Feet per Year (1,024,808,689 gallons per year). TMWRF effluent meets Category "B" effluent standards specified in NAC 445A.276. Category "B" effluent reuse requires no minimum buffer zone and is treated effluent suitable for use on parks, greenbelts, and playgrounds. The irrigated fields are fenced and posted at points of public access.

**Receiving Water Characteristics**: Groundwater at the site is of acceptable quality for drinking water purposes and is found at relatively shallow depths (e.g., 3-16 ft. below ground surface). The groundwater depth at the site varies seasonally according to the ambient climate and amount of irrigation water that has been applied over the course of the growing season. Presently, the facility monitors and reports on 16 on-site monitoring wells on a quarterly basis for total dissolved solids (TDS), chlorides, nitrate as nitrogen, and depth to groundwater. Average values for all monitoring wells for 2005 were as follows: TDS - 664 mg/L, Nitrate – 0.214 mg/L and Chloride – 88.2 mg/L. The TMWRF effluent supplied to NAES is reported to contain 3.01 mg/L Total Nitrogen and 0.14 mg/L Nitrate as Nitrogen (April 2005 to March 2006). The State groundwater limit (drinking water

standard) for nitrate in groundwater is 10.0 mg/L.

**Flow**: Currrently, NAES is limited to a 30-day average effluent flow of 5.6 MGD and a daily maximum flow of 7.7 MGD. The Permittee has requested that these limits be increased to a 30-day average effluent flow of 10.0 MGD, a daily maximum flow of 10.0 MGD, and an annual application volume of 3,145 acre-feet. Continuous flow monitoring is provided at the TMWRF effluent pumping station.

**Rationale for Permit Requirements:**

**Flow:** Flow is limited by the volume of treated effluent requested for application, and as long as the nitrogen budgets presented in the approved EMP are observed and annually balanced, the flow rate or volume of water requested can be authorized. The annual application volume is required to be recorded and reported because it is a variable that is used to calculate the total mass of nitrogen applied to the experimental fields and is used to reconcile the annual nitrogen balance.

**Nitrate:** The State groundwater limit (drinking water standard) for nitrate in groundwater is 10.0 mg/L. Groundwater monitoring is considered necessary to ensure that excessive nitrogen loading from inputs of effluent, crop fertilization, and livestock manure are not applied in excess of plant nitrogen uptake requirements.

**Fecal Coliform:** The concentration of fecal coliform in treated wastewater discharged for irrigation is restricted in accordance with NAC 445A.276 for a zero-distance buffer zone.

**TDS and Chlorides:** These parameters are monitored to ensure that the groundwater of the State is not degraded.

**Proposed Effluent Limitations, Schedule of Compliance and Special Conditions**

**Table 1 –Effluent Reuse Limitations**

| PARAMETER | DISCHARGE LIMITATIONS | | MONITORING REQUIREMENTS | |
|---|---|---|---|---|
| | 30 - Day Average | Daily Maximum | Measurement Frequency | Sample Type |
| Monthly Effluent Irrigation Flow, Million Gallons per Day (MGD) | 10.0 | 10.0 | Continuous | TMWRF Effluent Station Flowmeter |
| Annual Application Volume (AF/yr)[(1)] | 3,145 Acre-Feet/yr | | Cumulative | TMWRF Effluent Station Flowmeter |
| Fecal Coliform | 2.2 c.f.u. or mpn/100 ml[(2)] | 23 c.f.u. or mpn/100 ml[(2)] | Daily | TMWRF Discrete |

| | | | |
|---|---|---|---|
| Total Nitrogen-N (pounds/acre) | Calculate & report annual agricultural nitrogen application rate in 4th quarter DMR. Total Nitrogen-N applied shall not be greater than the agronomic uptake rate for each type of crop that is planted. | Annually | Calculation (Mass Balance) |

(1) Coliform forming units or most probable number per 100 milliliters of treated effluent.
(2) Report in 4th Quarter DMR.

**Table 2 – Groundwater Monitoring(1)**

| PARAMETER | DISCHARGE LIMITATIONS | | MONITORING REQUIREMENTS | |
|---|---|---|---|---|
| | 30 - Day Average | Daily Maximum | Measurement Frequency | Sample Type |
| TDS, mg/L | Monitor & Report | | Quarterly | Discrete |
| Chlorides, mg/L | Monitor & Report | | Quarterly | Discrete |
| Nitrate as N, mg/L(2) | Monitor & Report | | Quarterly | Discrete |
| Total Nitrogen-N mg/L | 10.0 | | Quarterly | Discrete |
| Depth to Groundwater, ft. | Monitor & Report | | Quarterly | Field Measurement |

(1) Presently 16 monitoring wells are monitored at NAES.
(2) Groundwater nitrate limits and compliance are specified in Part I.A.13. of permit.

**Schedule of Compliance:** The permittee shall submit the following items to the Division for review and approval:

- Within thirty (30) days of the permit issuance **(September 27, 2006)** and annually thereafter, due with the fourth quarter report, the Permittee shall submit to the Division the cross-connection control documentation required by Part I.A.17 of the permit conditions. The cross-connection control inspection shall be conducted by an American Water Works Association certified cross-connection control specialist. In conjuction with the inspection, the Permittee shall perform appropriate testing of backflow prevention assemblies conducted by an American Water Works Association certified cross-connection control specialist.

- Within thirty (30) days of the permit issuance **(September 27, 2006)**, the Permittee shall submit to the Division the wellhead protection procedures documentation required by Part

I.A.17 of the permit conditions.

- Within ninety (90) days of the permit issuance **(November 26, 2006)**, the Permittee shall submit a revised Groundwater Monitoring Plan (GMP), which will address a network of groundwater monitoring wells at the NAES site. If no changes have been made the GMP since the last submittal, so state.

- Within ninety (90) days of the permit issuance **(November 26, 2006)**, the Permittee shall submit an updated Effluent Management Plan (EMP) prepared by a qualified professional. If no changes have been made the EMP since the last submittal, so state.

**Procedures for Public Comment:** The Notice of the Division's intent to modify the NAES effluent reuse permit subject to the conditions contained within is being sent to the **Reno Gazette-Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of the public notice. The comment period can be extended at the discretion of the Administrator. The deadline date and time by which all written comments are to be postmarked (via mail) or transmitted to the Division via fax or e-mail is **August 28, 2006 by 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons.

The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

**Proposed Determination:** The Division has made the tentative determination to issue (renew) the proposed permit for a period of five (5) years.

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